

**PENGENDALIAN *Fusarium oxysporum* PENYEBAB  
PENYAKIT TANAMAN BAWANG MERAH (*Allium cepa* L.)  
DENGAN *Trichoderma asperellum* DAN *Rhizophagus aggregatus***

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**ABSTRAK**

Bawang merah (*Allium cepa* L.) merupakan komoditas hortikultura penting di Indonesia, namun produksinya sering menurun akibat penyakit moler yang disebabkan oleh *Fusarium oxysporum*. Penggunaan fungisida sintetis yang berlebihan menimbulkan dampak negatif, sehingga diperlukan alternatif ramah lingkungan seperti agen hayati *Trichoderma asperellum* dan *Rhizophagus aggregatus*. Penelitian ini bertujuan menguji potensi kedua agen dalam mengendalikan *F. oxysporum*. Metode meliputi identifikasi morfologi patogen, uji daya hambat *T. asperellum* secara *in vitro*, serta uji efektivitas kombinasi agen hayati secara *in vivo*. Hasil menunjukkan bahwa *T. asperellum* menghambat pertumbuhan patogen hingga 93,26% dan kombinasi dengan *R. aggregatus* menurunkan kolonisasi patogen hingga 66,68%. Kombinasi ini juga meningkatkan pertumbuhan tanaman, khususnya jumlah daun dan biomassa tajuk. Temuan ini menunjukkan efektivitas agen hayati dalam menekan penyakit serta mendukung pertumbuhan bawang merah secara berkelanjutan.

Kata Kunci: Bawang merah, *Fusarium oxysporum*, *Rhizophagus aggregatus*, *Trichoderma asperellum*.

## **Control of *Fusarium oxysporum* Causing Plant Disease of Shallot (*Allium cepa* L.) with *Trichoderma asperellum* and *Rhizophagus aggregatus***

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### **ABSTRACT**

Shallot (*Allium cepa* L.) is an important horticultural commodity in Indonesia, but its production is often reduced by moler disease caused by *Fusarium oxysporum*. Excessive use of synthetic fungicides has led to negative impacts, highlighting the need for eco-friendly alternatives such as the biocontrol agents *Trichoderma asperellum* and *Rhizophagus aggregatus*. This study aimed to evaluate the potential of these agents in controlling *F. oxysporum*. Methods included morphological identification of the pathogen, in vitro inhibition assay of *T. asperellum*, and in vivo effectiveness tests of the combined agents. Results showed that *T. asperellum* inhibited pathogen growth by up to 93.26%, while its combination with *R. aggregatus* reduced pathogen colonization by 66.68%. The combination also improved plant growth, particularly leaf number and shoot biomass. These findings demonstrate the effectiveness of biological agents in suppressing the disease and promoting sustainable shallot cultivation.

Keywords: *Fusarium oxysporum*, *Rhizophagus aggregatus*, shallot, *Trichoderma asperellum*.